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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/679,060

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Hong-Suk Yoo

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EXAMINER

FERGUSON, MARISSA L

ART UNIT

PAPER NUMBER

2854

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/679,060	Applicant(s) YOO ET AL.	
	Examiner Marissa L. Ferguson	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) ☐ Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3-8, 21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asada et al. (EP 0,471,628) in view of Streibig (US Patent 6,488,376) and Bradley, Jr. et al. (US Patent 5,824,374).

Regarding claim 1, Asada et al. teaches a cliché with grooves, each groove having a colored ink and transferring the colored ink from the cliché onto the substrate for forming a pattern of a LCD device (Figures 1a-1e and Column 4, Lines 7-21). However, he does not explicitly disclose a plurality of clichés and transferring an opaque material onto a color filter to form an opaque matrix pattern on top of a color filter. Streibig teaches a method of providing a plurality of clichés (30 and Column 3, Line 44) in which grooves (32,34,36,38) are formed, each groove having one of a color ink and opaque material (Column 2, Lines 24-39). Streibig does not teach transferring an opaque material onto a color filter to form an opaque matrix pattern on top of a color filter. Bradley, Jr. et al. teaches a method for providing a dark or opaque matrix material

on top coating materials comprising of red, green and blue color coatings (Column 11, Lines 15-17, Figures 1d, 1e, 1i, 1j and many references and figures throughout the patent).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Asada et al. to include a plurality of clichés as taught by Striebig, since Striebig teaches that it is advantageous to provide a quicker and effective method of transferring multiple colored inks.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Asada et al. to include a method step of transferring an opaque matrix on top of a color filter layer as taught by Bradley, Jr. et al., since Bradley, Jr. et al. teaches that it is advantageous effectively expose each of the colored pixel positions.

Regarding claim 3, Asada et al. teaches transferring the ink in the grooves of the cliché onto a surface of a printing roller (14) and transferring the ink on the printing roller to the substrate (Column 4, Lines 12-21 and Figures 1b-1e).

Regarding claim 4, Asada et al. teaches transferring the color ink in the grooves of the cliché onto the surface of the printing roller comprises rolling the printing roller on the clichés (Figures 1b-1e).

Regarding claims 5 and 8, Asada et al. teaches transferring the color ink on the printing roller to the substrate comprising rolling the print roller (14) containing the color ink on the substrate (Column 4, Lines 12-21 and Figures 1b-1e).

Regarding claims 6 ,7 and 25, Asada et al. teaches the invention claimed including a printing roller (14), however he does not explicitly disclose transferring each of the color inks from the groove of each cliché, wherein each cliché contains only one of the color inks and transfers the color inks to the substrate. Striebig at least teaches using a tamp pad to tamp one color at a time from a plurality of clichés (Column 5, Lines 36-64). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Asada et al. to include transferring each of the color inks from the groove of each cliché as taught by Striebig, since Striebig teaches pad printing different color inks to achieve patterns of high resolution.

Regarding claim 21, Asada et al. teaches supplying the color ink to the grooves (Column 4, Lines 9-10).

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asada et al. (EP 0,471,628) in view of Streibig (US Patent 6,488,376) and Bradley, Jr. et al. (US Patent 5,824,374) as applied to claim 1 above, and further in view of Kobayashi et al. (US Patent 5,017,223).

Asada et al., Streibig and Bradley, Jr. et al. all teach the invention and method claimed with the exception of removing ink present on a transfer apparatus that transfers the color inks in the clichés onto the substrate from the transfer apparatus prior to a new color ink being transferred to the transfer apparatus. Kobayashi et al. teaches removing ink from a roller (26) by a cleaning means (30). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to

further modify the invention as taught by Asada et al. to include cleaning a transfer apparatus as taught by Kobayashi et al., since Kobayashi et al. teaches that it advantageous to effectively prepare a transfer apparatus for the formation of a new ink pattern to be transferred to a substrate.

3. Claims 9,10-16, 17-19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asada et al. (EP 0,471,628) in view of Streibig (US Patent 6,488,376) and Bradley, Jr. et al. (US Patent 5,824,374) as applied to claim 1 above, and further in view of Evans et al. (US Patent 5,514,503).

Regarding claims 9,10,14 and 17, Asada et al., Streibig and Bradley, Jr. et al. all teach the claimed invention including removing at least one of the excess color inks and opaque material from the clichés prior to transferring the color inks in the clichés onto the substrate (Column 2, Lines 28-34 and Figure 4a) as taught by Streibig, however the references do not explicitly disclose hardening a color filter and opaque material after forming the color filter on the substrate and applying at least one of UV radiation and heat to harden the color filter. Evans et al. teaches printing a color filter and opaque material using a hardener and applying an ultraviolet radiation to heat a color filter (Column 5, Lines 48-56 and Column 6, Lines 14-32). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the invention as taught by Asada et al. to include a hardener and ultraviolet radiation as taught by Evans et al., since Evans et al. teaches that is advantageous to cure and set the inks in order to perform an efficient embossing operation.

Regarding claims 11-13 and 15, Asada et al., Streibig and Bradley, Jr. et al. all teach the claimed invention including providing a dark or opaque matrix material on top coating materials comprising of red, green and blue color coatings (Column 11, Lines 15-17, Figures 1d, 1e, 1i, 1j and many references and figures throughout the patent) as taught by Bradley, Jr. et al., however the references do not teach transferring the opaque material to a surface of a printing roller, transferring the opaque material to a boundary area between the color inks (such as red, green and blue inks) forming the color filter and provides plurality of supply rollers. Evans et al. teaches transferring a black material (element 10 serves as opaque material) to a boundary area between the color inks (36 and Column 6, Lines 7-13) in order to form a color filter with opaque material in between (Figure 4 and Column 9, Lines 2-18 and Column 6, Lines 14-32) and providing plurality of ink supplying rollers (54, 56).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the invention as taught by Asada et al. to include a method of depositing an opaque material between colored inks as taught by Evans et al., since Evans et al. teaches that it is desirable to deposit a flat layer of color and black in order to provide high quality, uniform thickness and to improve resolution.

Regarding claims 16 and 18, Asada et al. teaches moving a blade (13) along the cliché such that the grooves are substantially filled by a colored ink and to remove excess colored ink, wherein the filled grooves are substantially planar with a remainder of the cliché, and wherein the colored ink on the surface of the cliché in the grooves are removed (Figures 1a-1e).

Regarding claims 19 and 20, Asada et al., Streibig and Bradley, Jr. et al. all teach the claimed invention with the exception of transferring all of the color inks to the substrate on a single transfer apparatus and disposing all of the color inks on the transfer apparatus at the same time. Evans et al. teaches a method of transferring inks to a substrate with a single transfer apparatus (16) and transferring at the same time (Column 7, Lines 64-67 and Column 8, Lines 1-11). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Asada et al. to include transferring inks on a single transfer apparatus and at the same time as taught by Evans et al., since Evans et al. teaches that it is advantageous to provide a uniform and smooth color filter layer.

4. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asada et al. (EP 0,471,628) in view of Streibig (US Patent 6,488,376) and Bradley, Jr. et al. (US Patent 5,824,374) as applied to claim 21 above, and further in view of Bock et al. (US Patent 5,544,582).

Asada et al., Streibig and Bradley, Jr. et al. all teach the invention claimed with the exception of providing a plurality of rollers, imparting at least one of the color inks to an ink supply roller and rolling each roller on only one cliché. Bock et al. teaches a plurality of rollers (52,54,56 and 58) and supplying at least one of the color inks from an ink source (60) to an ink supply roller (Figure 9) and rolling each roller on one plate (72 and Figure 8). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the invention as taught by Asada

et al. to include a plurality of rollers for applying at least one of a color ink to an ink supply roller as taught by Bock et al., since Bock et al. teaches that is advantageous to thoroughly coat a roller in order to provide an accurate pattern to a substrate.

5. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asada et al. (EP 0,471,628) in view of Streibig (US Patent 6,488,376), Bradley, Jr. et al. (US Patent 5,824,374), Evans et al. (US Patent 5,514,503) and Kobayashi et al. (US Patent 5,017,223).

Regarding claims 26 and 27, Asada et al. teaches the claimed invention including providing a method for LCD displays and transferring ink from a cliché with a printing roller (14) to a substrate. However, he does not explicitly disclose supplying clichés with color inks, transferring a first, second, third and opaque colored inks from grooves of first, second and third clichés and transferring first, second and third colored inks onto a substrate forming a color filter, transferring the opaque material to a boundary area between the color inks (such as red, green and blue inks) forming the color filter and provides plurality of supply rollers, transferring using a printer roller and removing color ink present before applying a new ink color, transferring a black material to a boundary area between the color inks in order to form a color filter with opaque material in between and providing plurality of ink supplying rollers and providing an opaque matrix layer on top of a color filter layer. Streibig teaches the claimed invention including supplying clichés with color inks, transferring a first, second, third and opaque (Column 2, Lines 24-39) colored inks from grooves of first, second and third clichés (30) and transferring first, second and third colored inks onto a substrate (Column 3, Lines 41-52

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and Figures 4a-4e show the steps of transferring ink from grooves and depositing it on a substrate 22) forming a color filter, transferring the opaque material to a boundary area between the color inks (such as red, green and blue inks) forming the color filter and provides plurality of supply rollers, transferring using a printer roller and removing color ink present before applying a new ink color. However, Streibig does not teach providing an opaque matrix layer on top of a color filter layer and transferring a black material to a boundary area between the color inks in order to form a color filter with opaque material in between and providing plurality of ink supplying rollers. Bradley, Jr. et al. teaches a method for providing a dark or opaque matrix material on top coating materials comprising of red, green and blue color coatings (Column 11, Lines 15-17, Figures 1d, 1e, 1i, 1j and many references and figures throughout the patent). However, Bradley et al. does not teach transferring a black material to a boundary area between the color inks in order to form a color filter with opaque material in between and providing plurality of ink supplying rollers or removing an ink. Evans et al. teaches transferring a black material (element 10 serves as opaque material) to a boundary area between the color inks (36 and Column 6, Lines 7-13) in order to form a color filter with opaque material in between (Figure 4 and Column 9, Lines 2-18 and Column 6, Lines 14-32) and providing plurality of ink supplying rollers (54, 56) and removing color ink present before applying a new ink color. Kobayashi et al. teaches removing ink from a roller (26) by a cleaning means (30).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Asada et al. to include a plurality of clichés as taught by Striebig, since Striebig teaches that it is advantageous to provide a quicker and effective method of transferring multiple colored inks.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Asada et al. to include a method step of transferring an opaque matrix on top of a color filter layer as taught by Bradley, Jr. et al., since Bradley, Jr. et al. teaches that it is advantageous effectively expose each of the colored pixel positions.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the invention as taught by Asada et al. to include to deposit an opaque material between colored inks as taught by Evans et al., since Evans et al. teaches that it is desirable to deposit a flat layer of color and black in order to provide high quality, uniform thickness and to improve resolution.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the invention as taught by Asada et al. to include cleaning a transfer apparatus as taught by Kobayashi et al., since Kobayashi et al. teaches that it advantageous to effectively prepare a transfer apparatus for the formation of a new ink pattern to be transferred to a substrate.

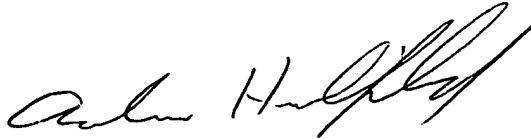
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa L Ferguson whose telephone number is (571) 272-2163. The examiner can normally be reached on (M-T) 6:30am-4:00pm and every other (F) 7:30am-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marissa L Ferguson
Examiner
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